



IN THE UNITED STATES PATENT AND TRADEMARK OFFICE
BEFORE THE BOARD OF PATENT APPEALS AND INTERFERENCES

APPLICANTS: Moe *et al.* GROUP ART UNIT: 3644
SERIAL NO.: 10/615,673
FILING DATE: October 15, 2001 EXAMINER: Dinh, Tien Quang
TITLE: METHOD AND APPARATUS FOR NOISE ABATEMENT AND ICE
PROTECTION OF AN AIRCRAFT ENGINE NACELLE INLET LIP

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Louis S. Sorell
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32,439
PTO Registration No.
October 23, 2006
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SUPPLEMENTAL REPLY BRIEF

This Supplemental Reply Brief is submitted in accordance with 37 C.F.R. § 41.43(b) and in response to the second “Examiner’s Answer” (understood by Applicants’ attorneys to be a Supplemental Examiner’s Answer pursuant to 37 C.F.R. § 41.43(a)) mailed on October 4, 2006, in response to the Reply Brief filed on June 30, 2006. The Commissioner is hereby authorized to charge undersigned counsel’s deposit account number 06-0923 with reference to docket number 104874-142119 to cover any additional fees required fee for the filing of this Supplemental Reply Brief.

STATUS OF CLAIMS

The application as filed contained Claims 1-20. During prosecution, Claims 14, 15, and 17-20 were cancelled. Pending Claims 1-13 and 16 have been finally rejected and are the subject of this appeal.

GROUND S OF REJECTION TO BE REVIEWED ON APPEAL

The grounds of rejection to be reviewed are as follows:

Claims 1-9 and 16 stand finally rejected under 35 U.S.C. § 103(a) as being unpatentable as obvious over U.S. Patent No. 4,291,079 to Hom et al. (hereinafter “Hom”) or U.S. Patent No. 5,653,836 to Mnich et al. (hereinafter “Mnich”) in view of U.S. Patent No. 3,800,121 to Dean et al. (hereinafter “Dean”).

Claims 10-13 stand finally rejected under 35 U.S.C. § 103(a) as being unpatentable as obvious over Hom and Mnich in view of Dean and further in view of U.S. Patent No. 4, 514,619 to Kugelman et al. (hereinafter “Kugelman”) or U.S. Patent No. 4,036,457 to Volkner et al. (hereinafter “Volkner”).

ARGUMENT

For reasons set forth below, Appellants respectfully appeal the final rejection of Claims 1-13 and 16. In the ensuing argument, we address each of the Examiner's grouped rejections in turn.

1. Claims 1-9 and 16 constitute nonobvious subject matter and are patentable under 35 U.S.C. § 103(a) over Hom or Mnich in view of Dean.

Independent Claim 1 is directed to an acoustic panel for use in the inlet lip portion (exemplified by (20) in Figures 1 and 2A) of a gas turbine engine nacelle (exemplified by (21) in Figures 1 and 2A). The acoustic panel (exemplified by (104) in Figures 2A and 2B) includes a solid back skin (exemplified by (109) in Figures 2A and 2B), an acoustically permeable front skin (exemplified by (110) in Figures 2A and 2B), a honeycomb cell structure (exemplified by (108) in Figures 2A and 2B) located between the front skin and back skin, and an ice protection system which includes an acoustically permeable and electrically and thermally conductive structure (exemplified by (112) in Figures 2A and 2B), which includes means for connection to an electrical power source, in which the ice protection system is thermally insulated from the permeable front skin.

Claims 2-9 are ultimately dependent from and therefore incorporate the limitations of Claim 1.

Independent Claim 16 is directed to an inlet lip (exemplified by (20) in Figures 1 and 2A) for an aircraft gas turbine engine nacelle (exemplified by (21) in Figures 1 and 2A). The inlet lip includes an acoustic panel (exemplified by (104) in Figures 2A and 2B) which includes a solid back skin (exemplified (109) in Figures 2A and 2B), an acoustically permeable front skin (exemplified by (110) in Figures 2A and 2B), a honeycomb cell structure therebetween (exemplified by (108) in Figures 2A and 2B), and an ice protection system which includes an acoustically permeable and electrically and thermally conductive structure (exemplified by (112) in Figures 2A and 2B) in electrical connection to an electric power source, in which the ice protection system is thermally insulated from the permeable front skin.

The Examiner has asserted that one of ordinary skill in the art at the time of invention of the subject matter of Claims 1-9 and 16 would have found these claims obvious in view of the combined teachings of Hom or Mnich in view of Dean. Hom, Mnich and Dean are discussed in detail in the Amended Appeal Brief dated February 10, 2006 (“the Amended Appeal Brief”).

As set for in the Amended Appeal Brief and the Reply Brief dated June 30, 2006 (“the Reply Brief”), the Examiner has failed to establish the *prima facie* obviousness of Claims 1-9 and 16. In the second “Examiner’s Answer” mailed on October 4, 2006 (referred to herein as “the Supplemental Examiner’s Answer”), the Examiner has now asserted that one skilled in the art would be motivated to combine the noise attenuating acoustic panels of Hom or Mnich with the ice protection system of Dean because “one skilled in the art **would want to use** as many systems if desired to protect the aircraft. This would be **prime motivation** to use an ice protection system in Hom or Mnich’s system.” Supplemental Examiner’s Answer, p. 2 (emphasis added).

However, it is respectfully submitted that the Examiner’s position that the “prime motivation” of one skilled in the art to combine the teachings of Dean and Hom or Mnich is that such a person “would want to use” the ice protection system of Dean in combination with the noise attenuating acoustic panels of Hom or Mnich is insufficient to establish the requisite objective reason as to why one skilled in the art would make such a combination. It is axiomatic that the mere fact that references can be combined or modified does not render the resultant combination obvious unless the prior art also suggests the desirability of the combination. *See* MPEP § 2143.01 at p. 2100-128 (Rev. 5, August 2006) (emphasis in original and citation omitted). Moreover, to establish *prima facie* obviousness based upon the assertion that the references relied upon teach that all aspects of the claimed invention were individually known in the art, the Examiner must provide some objective reason to combine the teachings of the references. *See id.* In other words, there must be some suggestion or motivation to combine the teachings of the references, and in addition, there must be a reasonable expectation of success resulting from the combination. *See, e.g., In re Koztrab*, 217 F.3d 1365, 1370, 55 U.S.P.Q.2d 1313, 1316 (Fed. Cir. 2000) (to establish obviousness, there must be some suggestion, motivation, or teaching of the desirability of making the specific claimed combination). The teaching or suggestion to make the asserted combination and the reasonable expectation of

success must both be found either in the references themselves or in the knowledge generally available to one of ordinary skill in the art, not based on Appellants' disclosure. *In re Vaeck*, 947 F.2d 488, 493, 20 U.S.P.Q.2d 1438, 1442 (Fed. Cir. 1991).

Moreover, the Examiner states that the requisite motivation to combine the ice protection system of Dean with the noise attenuating acoustic panels of Hom or Mnich has been established merely because "[b]y clearly using an ice protection system in Hom or Mnich's system, this will prevent the potentially disastrous crash of the aircraft [and] would motivate one skilled in the art to use the ice protection system [of Dean]." Supplemental Examiner's Answer, p. 2. Thus, the Examiner is impermissibly substituting *the general understanding* that an aircraft ice protection system is desirable for *the requisite teaching or suggestion* to combine the ice protection system of Dean with the noise attenuation acoustic panels of Hom or Mnich.

The Examiner has again failed to explain why one of ordinary skill in the art would seek to combine an ice protection system used on a solid surface such as an aircraft wing (as in Dean) on perforated acoustic panels (as in Hom and Mnich). Accordingly, in view of the failure of the teachings of the cited prior art to suggest the combination of Hom or Mnich with Dean, it is respectfully submitted that the Examiner is impermissibly employing hindsight in combining the acoustic panels of Hom or Mnich and the ice protection system of Dean. *See, e.g., In re Skoll*, 523 F.2d 1392, 1396, 187 U.S.P.Q. 481, 484 (CCPA 1975) (the prior art references, viewed by themselves and not in retrospect, must suggest doing what the applicant had done). One cannot "import hindsight into the obviousness determination by using the invention as a roadmap to find its prior art components." *Princeton Biochemicals Inc. v. Beckman Coulter Inc.*, 411 F.3d 1332, 75 U.S.P.Q.2d 1051 (Fed. Cir. 2005).

In addition, even if one of ordinary skill in the art would have been motivated to combine the acoustic panels of Hom or Mnich with the ice protection of Dean, there is no teaching or suggestion that the multi-layered, insulated structure of Dean could successfully be employed as an acoustically permeable structure. In fact, such a combination would impermissibly change the basic principle of operation of Dean, which is the use of its multi-layered ice protection system on a solid surface such as wing skin (10), not a perforated or acoustically permeable structure as disclosed by Hom or Mnich. *See In re Ratti*, 270 F.2d 810, 813, 123 U.S.P.Q. 349, 352 (CCPA 1959).

Moreover, as noted at paragraph [0009] of the specification as filed, the prior art hot air aircraft de-icing systems are incompatible with the relatively low temperature capability adhesively bonded honeycomb noise abatement structures (such as the acoustic panels of Hom and Mnich). Thus, there is a long-felt but unsolved need in the art for providing a de-icing system which is compatible with the relatively low temperature capability of adhesively bonded honeycomb noise abatement structures. The present invention as set forth in Claims 1-9 and 16 satisfies this long-felt but unsolved need, and therefore is nonobvious in view of the prior art.

Accordingly, for at least the reasons discussed above, the Examiner's rejection fails to satisfy the requirements of 35 U.S.C. § 103, and Claims 1-9 and 16 are nonobvious in view of the cited prior art.

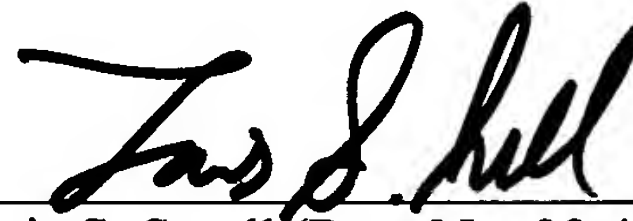
2. *Claims 10-13 constitute nonobvious subject matter and are patentable under 35 U.S.C. §103 (a) over Hom or Mnich in view of Dean, further in view of Kugelman or Volkner.*

Claims 10-13 directly or indirectly depend from Claim 1 and include all the limitations thereof. As discussed above, Claim 1 is patentable over Hom or Mnich and Dean. Kugelman or Volkner do not cure the deficiencies of Hom or Mnich and Dean, because neither teach an ice protection system that has an acoustically permeable structure. Accordingly, Claims 10-13 are nonobvious in view of the cited prior art.

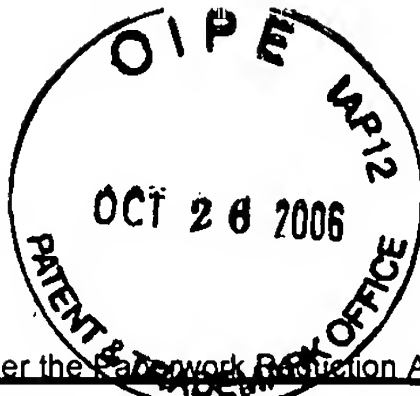
In view of the arguments above, together with the arguments previously submitted in Appellants' Amended Appeal Brief and Reply Brief, Appellants respectfully submit that Claims 1-13 and 16 are patentable and urge the Board to reverse all of the Examiner's rejections as to each of these claims.

Respectfully submitted,

Date: October 23, 2006



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FORM**

(to be used for all correspondence after initial filing)

Total Number of Pages in This Submission

Application Number	10/615,673
Filing Date	October 15, 2001
First Named Inventor	Moe
Art Unit	3644
Examiner Name	Tien Quang Dinh
Attorney Docket Number	104874-142119

ENCLOSURES (Check all that apply)

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<input type="checkbox"/> Affidavits/declaration(s)
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<input type="checkbox"/> Reply to Missing Parts under 37 CFR 1.52 or 1.53 | <input type="checkbox"/> Drawing(s) Figs. 6A-6D and 7
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Remarks

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Signature			
Printed name	Louis S. Sorell		
Date	October 23, 2006	Reg. No.	32,439

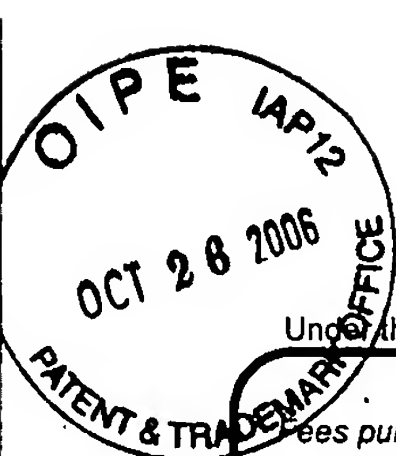
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FEE TRANSMITTAL

For FY 2006

☐ Applicant claims small entity status. See 37 CFR 1.27

TOTAL AMOUNT OF PAYMENT (\$)

Complete if Known

Application Number	10/615,673
Filing Date	October 15, 2001
First Named Inventor	Moe
Examiner Name	Tien Quang Dinh
Art Unit	3644
Attorney Docket No.	104874-142119

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Application Type	FILING FEES		SEARCH FEES		EXAMINATION FEES		Fees Paid (\$)
	Fee (\$)	Small Entity Fee (\$)	Fee (\$)	Small Entity Fee (\$)	Fee (\$)	Small Entity Fee (\$)	
Utility	300	150	500	250	200	100	
Design	200	100	100	50	130	65	
Plant	200	100	300	150	160	80	
Reissue	300	150	500	250	600	300	
Provisional	200	100	0	0	0	0	

2. EXCESS CLAIM FEES

Fee Description	Fee (\$)	Small Entity Fee (\$)
Each claim over 20 (including Reissues)	50	25
Each independent claim over 3 (including Reissues)	200	100
Multiple dependent claims	360	180

Total Claims **Extra Claims** **Fee (\$)** **Fee Paid (\$)**

15 - 20 or HP = _____ x _____ = _____

HP = highest number of total claims paid for, if greater than 20.

Indep. Claims **Extra Claims** **Fee (\$)** **Fee Paid (\$)**

5 - 3 or HP = 2 x _____ = _____

HP = highest number of independent claims paid for, if greater than 3.

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If the specification and drawings exceed 100 sheets of paper (excluding electronically filed sequence or computer listings under 37 CFR 1.52(e)), the application size fee due is \$250 (\$125 for small entity) for each additional 50 sheets or fraction thereof. See 35 U.S.C. 41(a)(1)(G) and 37 CFR 1.16(s).

Total Sheets	Extra Sheets	Number of each additional 50 or fraction thereof	Fee (\$)	Fee Paid (\$)
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4. OTHER FEE(S)

Non-English Specification, \$130 fee (no small entity discount)

Other (e.g., late filing surcharge): _____

Fees Paid (\$)

SUBMITTED BY

Signature

Registration No. 32,439
(Attorney/Agent)

Telephone 212-459-7421

Name (Print/Type) Louis S. Sorell

Date October 23, 2006

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